In the Claims

1-9 (cancelled)

10. (previously presented) A method of controlling a plurality of network communication units which are linked by a cascade connection that provides a communication path for data packets from any unit to any other unit, comprising:

(i) establishing a control path for point-to-point control messages from each unit to the next, the control path being distinct from said communication path;

(ii) sending only along said control path said point-to-point control messages which include fields denoting an identification of a communication unit and a count of communication units which are operative to receive and forward data packets only on said communication path; and

(iii) for each respective unit;

(a) altering the identification to denote the respective unit; and

(b) incrementing the said count if the respective unit is operative to receive and forward data packets on said communication path.

11. (previously presented) A method according to claim 10 and further comprising determining when said count is complete and broadcasting a total of said count by way of point-to-point control messages on said control path.

12. (currently amended) A connecting unit for use in a system comprising a plurality of network communication units having a cascade connection

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including said connecting unit, the connecting unit having three external ports consisting of a first, second and third port, each port of the connecting unit being ~~adapted for coupling~~ configured to couple to one of said network communication units and ~~for forwarding and receiving~~ to forward and receive data packets, the connecting unit including multiplexers which ~~can~~ provide a data path for packets from each of the said ports to either of the others ~~and which are responsive to point-to-point control messages separate from said data packets and received from any network communication units coupled to said ports to provide for bypassing of~~ and which bypass the data path of a port to which an active communication unit is not coupled based upon point-to-point control messages on a control path provided from each of the said ports to either of the others and separate from said data path.

13. (previously presented) a connecting unit according to claim 12 wherein each port has control lines separate from said data path for transmitting and receiving said point-to-point control messages so as to determine the status of a communication unit to which the respective port is connected, the multiplexers being controlled by control logic responsive to said control messages

14. (previously presented) A connecting unit according to claim 12 and disposed to increment a signal value representing identification numbering in accordance with the number of communication units to which the connecting unit is coupled and to increment a signal value representing an active unit count in accordance with signals indicating an operational state of each communication unit to which the connecting unit is coupled and to

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effect by way of the control messages the communication of said signal values from at least the second port.

15. (currently amended) A connecting unit for use in a system comprising a plurality of network communication units having a cascade connection including said connecting unit, the connecting unit having three external ports consisting of a first, second and third port, each port of the connecting unit having first lines for forwarding and receiving data packets and second lines, separate from said first lines, for forwarding and receiving point-to-point control messages from each of the said ports to either of the others, and including control logic under the control of the control messages; the connecting unit providing a data path for packets from the first port to the third port and from the third port to the second and also from the second port to the first, the connecting unit forwarding to the third port packets received at the first port when said control logic indicates that an active communication unit is coupled to the third port and by-passing the third port when said control logic indicates that an active communication unit is not coupled to the third port.

16. (previously presented) A connecting unit according to claim 15 wherein the connecting unit includes multiplexers each of which is controllable by the control logic to direct packets received at a respective port to either one of the other two ports and to cause bypass of a port to which an active communication unit is not connected.

17. (currently amended) A connecting unit according to claim 16 wherein the control logic receives by way of the first port control ~~massages~~ messages

indicating an identification number and provides from the second port control messages modified to indicate an increase in the identification number.

18. (currently amended) A connecting unit according to ~~any of~~ claim 15 wherein the control logic receives by way of the first port a count which represent a number of active communication units and provides from the second port a count which is incremented ~~or not according as~~ only if an active communication unit is coupled to the third port.

19. (currently amended) A system comprising at least three network communication units each of which has a cascade port and a multiplicity of other ports for the reception and forwarding of addressed data packets, and at least one connecting unit, each such connecting unit having a first external port, a second external port and a third external port each having first lines for forwarding and receiving data packets from each of the said ports to either of the others and second lines, separate from said first lines, for forwarding and receiving distinctive point-to-point control messages from each of the said ports to either of the others, wherein each communication unit is coupled by way of its cascade port to a respective external port of a connecting unit, whereby to form a ring connection constituted by a point-to-point communication link between each communication unit and the next in the system and wherein each connecting unit includes control logic for generating and receiving the control messages and for controlling the connecting units to cause the data packets to bypass an external port of said connecting unit when an active communication unit is not coupled to that external port.

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20. (previously presented) A system according to claim 19 wherein the connecting units provide a data path for packets in each of two directions around the ring.

21. (currently amended) A system according to claim 19 wherein for each connecting unit the control logic receives control messages ~~indicating a~~ indicating an identification number and to provide control messages modified to indicate an increase in the identification number.

22. (currently amended) A system according to claim 19 wherein for each connecting unit the control logic receives a count which represent a number of active communication units and provides a count which is incremented ~~by unity or not according as~~ only if an active communication unit is ~~or is not~~ coupled to the third external port of the respective connecting unit.

23 (previously presented) A system according to claim 19 wherein each communication unit accommodates an interface which is coupled to a single respective external port of a connecting unit and provides for the communication of data packets between the respective communication unit and the connecting unit having said respective port.

24 (previously presented) A system according to claim 23 wherein the interface provides for the storage of a respective identification number.

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25. (previously presented) A system according to claim 23 wherein said interface is a modular unit removable from the respective communication unit.

26. (previously presented) A system according to claim 23 wherein for connecting an external port of a connecting unit to an external port of another connecting unit there is provided a connecting cable which co-operates with a signal state of said control messages to indicate which end of the cable is connected to a respective one of said first and second external ports.

27. (currently amended) A connecting unit for use in a system comprising a plurality of network communication units having a cascade connection including said connecting unit, the connecting unit comprising:

(i) three external ports consisting of a first, second and third port, each port of the connecting unit being ~~adapted for forwarding and receiving~~ configured to forward and receive data packets and ~~for separately forwarding and receiving~~ to separately forward and receive point-to-point control messages;

(ii) multiplexers ~~which can provide~~ for providing a respective data path for packets to each one of the ports from either of the other two ports selectively; and

(iii) control logic for determining from said point-to-point control messages for each port a link status and for controlling the multiplexers to bypass any one of said ports when the respective link status indicates that data packets are not to be received from that port.

28. (previously presented) A connecting unit according to claim 27 wherein there is one of said multiplexers for each port and each such multiplexer is controllable to direct to the respective port data packets from either one of the other two ports selectively and wherein the multiplexers bypass a port by preventing supply of packets from that port to the other two respective ports.

29. (previously presented) A connecting unit according to claim 27 wherein each port is arranged to transmit and receive control messages so as to determine the link status of the respective port.

30. (previously presented) A connecting unit according to claim 29 wherein each port has respective lines for the transmission and reception of the control messages separately from the data packets.

31. (previously presented) A connecting unit according to claim 24 wherein the control logic determines that data packets are not to be received from a port when the control logic determines an absence of control messages received by that port.

32. (previously presented) A connecting unit according to claim 29 wherein the control messages include a field for representing the link status as if it were false.

33. (currently amended) A connecting unit for use in a system comprising a plurality of network communication units having a cascade connection including said connecting unit, the connecting unit comprising:

(i) three external ports consisting of a first, second and third port, each port of the connecting unit ~~being adapted for forwarding and receiving~~ configured to forward and receive data packets and ~~for transmitting and receiving~~ to transmit and receive point-to-point control messages separately from the data packets from the connecting unit;

(ii) multiplexers ~~which can provide~~ for providing a respective data path for packets to each one of the ports from either of the other two ports selectively; and

(iii) control logic for determining for each port a link status depending on whether control messages are received by the port and for controlling the multiplexers to bypass any one of said ports when the link status corresponds to the absence of reception of control messages at that port.

34. (previously presented) .A connecting unit according to claim 33 wherein there is one of said multiplexers for each port and each such multiplexer is controllable to direct to the respective port data packets from either one of the other two ports selectively and wherein the multiplexers bypass a port by preventing supply of packets from that port to the other two respective ports.

35 (previously presented) A connecting unit according to claim 33 wherein the control messages include a field for causing the control logic to treat the reception of control messages as the absence of control messages.

36. (previously presented) A connecting unit according to claim 33 wherein the control logic is arranged to receive by way of the first port control messages indicating an identification number and to provide from the second

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port control messages modified to indicate an increase in the identification number.

37. (currently amended) A connecting unit according to claim 33 wherein the control logic is arranged to receive by way of the first port control messages including a count which represents a number of active communication units and to provide from the second port control messages including a count which is incremented ~~or not according as~~ if an active communication unit is coupled to the third port.

38. (currently amended) A connecting unit for use in a system comprising a plurality of network communication units having a cascade connection including said connecting unit, the connecting unit comprising:

    (i) three external ports consisting of a first, second and third port, each port of the connecting unit ~~being adapted for forwarding and receiving~~ configured to forward and receive addressed data packets and ~~for transmitting and receiving~~ to transmit and receive point-to-point control messages separately from the data packets from the connecting unit;

    (ii) for each port, a respective multiplexer which is controllable to direct to the respective port data packets from either one of the other two ports selectively whereby the multiplexers ~~can~~ bypass a port by preventing supply of packets from that port to the other two respective ports; and

    (iii) control logic for determining for each port a link status depending on whether control messages are received by the port and for controlling the multiplexers to bypass any one of said ports when the link status corresponds to the absence of reception of control messages at that port.

39. (previously presented) A connecting unit according to claim 38 wherein the control messages include a field for causing the control logic to treat the reception of control messages as the absence of control messages.

40. (currently amended) A connecting unit according to claim 18 wherein the control logic is arranged to receive by way of the first port control messages including a count which represents a number of active communication units and to provide from the second port control messages including a count which is incremented ~~or not according as an~~ if an active communication unit is coupled to the third port.